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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/077,548

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Swatee N. Surve

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EXAMINER

MUROMOTO JR, ROBERT H

ART UNIT

PAPER NUMBER

3765

MAIL DATE

DELIVERY MODE

03/17/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/077,548	Applicant(s) SURVE, SWATEE N.	
	Examiner BOBBY H. MUROMOTO JR	Art Unit 3765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,8,16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,8,16,18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In view of the amendment filed on 1/7/2009, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Technology Center Director has approved of reopening prosecution by signing below:

/KAREN M. YOUNG/

Director, Technology Center 3700

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 8, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Post et al. '771 in view of Okuhashi US 3586597.

Post discloses the fabrication of electronic devices and circuits, and in particular to the integration of such devices and circuits into textiles (fabrics, clothing material). Post discloses a fabric woven with non-conductive fibers in the warp and a conductive fiber in the weft. The conductive fibers 110 may be continuously adjacent along the weft (substrate). The leads of a resistor and a **capacitor** 122, as well as the pins of an integrated circuit 124 are soldered to single fibers of the fabric 100 (col.4, lines 15-51). A fabric comprising a woven matrix of conductive fibers running in both directions can be used to capacitively or electrically couple electronic components, or in sheet form can serve as an electrostatic antenna.

To prevent fibers 110 from making unwanted contact as a result of folding, the fabric 100 may be provided with a non-conductive (insulating, protective, shield,) coating (e.g., a transparent acrylic coating that may be sprayed on) following affixation of the electronic components. Alternatively, an insulating layer 135 may be applied to one or both sides of the fabric 100. Insulating layer can, if desired, be a textile with handling characteristics similar to those of the fabric 100 (col. 4, lines 58-65).

Electrically active textiles can also be created by sewing, embroidery or weaving of conductive material into a substantially non-conductive fabric matrix or substrate. Typically, the threads are formed by spinning together fibers of a polymer such as KEVLAR® with fibers of a metal.

Another embodiment uses an elastic (e.g., foam) panel to provide resistance in a switching mechanism for the circuit.

In yet another embodiment, the strips of **conductor material may be coated with a semiconductor to form nonlinear thresholding elements at the overlap regions that prevent false contacts** and/or phantom switching.

Although, Post teaches essentially all of the limitations of the claimed invention, (although Post does clearly disclose an additional semiconductor coating for preventing false contacts, which is in the scope of the broad "shield" limitations); Post does not explicitly teach a conductive shield layer formed over the electronic component.

However, the use of conductive shield materials for 'shielding' electronic components is a widely known and practiced technique in the art of electronic engineering.

Further, Okuhashi teaches cloth having antistatic properties that uses fibers that are coated with an additional conductive coating for providing electromagnetic shielding properties to the fibers.

Specifically, Okuhashi teaches:

"Furthermore, if electrically-conductive yarns are incorporated at intervals of 1 cm. or less in parallel fashion or in cross stripes, the obtained cloth possesses not only an excellent antistatic effect but also **a shielding effect of electro-static flux lines**.

Thus, it can be made into working wears for persons dealing with electronics and with high voltage live lines. **The electrically-conductive fibers used in the present**

invention include not only those in which an electric resistance is in the region of

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an ordinary conductor, but also those in which an electric resistance is very high such as 109 D/cm. It is surprising that a marked antistatic effect is exhibited even when a small amount of a fiber having such high electric resistance is incorporated. it is not easy to explain the mechanism of prevention of electrification with simplicity. Generally, a high voltage above 1000 volts poses a problem in an unfavorable electrification of ordinary organic textile fibers, and a quantity of electrostaticity generated at this time is very small. **Hence, it is presumed that even in the case of such high electric resistance, a local intrinsic electric breakdown of the coating occurs under such -high voltage, and electrostatic charge is easily dissipated with this electrically-conductive fiber by such effects as gaseous corona discharge, surface flashover and tracking and leakage, thus preventing the accumulation of electrostatic charge.** This seems to contribute greatly to the prevention of electrostatic charge. Further, **the dispersion of electrostatic charge through the electrically-conductive fiber as well as the shielding effect of the fiber seem to contribute to the antistatic effect. The electrically-conductive fibers used in the present invention retain the functional properties of textile fibers and have durability against various conditions that are usually encountered during the manufacture of woven or knitted cloths for use in garments and underwear and during their use,** such as abrasion, repetitive flexure, repetitive elongation and relaxation, scouring, dyeing and washing. The **electrically-conductive fibers of this invention can be incorporated in the knitted or woven cloth very readily during their manufacture.** The cloths according to the present invention which contain a small

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amount of the electrically-conductive fibers have durable antistatic properties, and their appearance and hand are also highly satisfactory. Further, these electrically- conductive fibers are compatible with the other fibers that make up the cloths, and therefore, their tendency to separate from the surface 20 during the use of the cloth is slight. The knitted or woven cloths for garments and underwear according to the invention may be either weave cloth such as plain weave cloth, twill cloth, satin cloth and other fancy weave cloth, or knitted cloth such as weft knitted 25 cloth and warp knitted cloth. Outer garments, shirts, blouses, underwear, lingeries and other wearing cloths made from these woven or knitted cloths possess durable antistatic properties.”

Therefore it would have been obvious at the time of invention to one of ordinary skill in the electrical engineering arts to use a conductive coating on a fiber to provide the fiber with a so-called 'shield material' as this is well known and widely established practice in the art of electrical engineering and further evidenced by the teaching of Okuhashi that clearly teaches the use of conductive coating layers on fibers for providing a “shielding” function to the fibers.

Examiner's Comments

The decision by the board clearly affirms that all limitations of the claims are disclosed by the Post reference. The only limitations allegedly not disclosed are the inclusion of a 'shield layer' that is understood in the art of electrical engineering as a conductive material. Further, reading of Post actually does recite an additional semiconductor coating for preventing false contacts, which would broadly disclose a so-

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called 'protective layer' over the electronic component, the layer being a 'shield material'.

However, since the Board reversed the 102 rejection based on the Post reference with respect to the so-called, "protective", "shield layers", the Examiner has added a new ground of rejection based on Post in view of Okuhashi that shows clear prima facie case of obviousness with respect to well-known, protective, shield layers on fibers for electronic shielding functionality.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BOBBY H. MUROMOTO JR whose telephone number is (571)272-4991. The examiner can normally be reached on 8-530, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Welch can be reached on 571-272-4996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert H Muromoto, Jr./
Primary Examiner, Art Unit 3765

/Gary L. Welch/
Supervisory Patent Examiner, Art Unit 3765